

Claims

1. An optical reading device comprising a housing for receiving a test plate on which, according to a fixed pattern, test substances can be provided, which reading device further comprises optical conversion elements for converting light coming from a test substance into a measuring signal which corresponds to a predetermined parameter of the test substance, characterized in that the optical conversion elements comprise light-receiving areas configured in a pattern which corresponds to the pattern of the test plate.
5. An optical reading device according to claim 1, characterized in that the housing comprises a base plate, in which the optical conversion elements have been received in a pattern which corresponds to the pattern of the test plate, which base plate has a shape such that it can be coupled to a test plate for providing a direct optical contact between the optical conversion elements and test substances on the test plate.
10. An optical reading device according to claim 1, characterized in that the housing comprises a base plate, in which the optical conversion elements have been received in a pattern which corresponds to the pattern of the test plate, which base plate has a shape such that it can be coupled to a test plate for providing a direct optical contact between the optical conversion elements and test substances on the test plate.
15. An optical reading device according to any one of the preceding claims, characterized in that the device comprises coupling means for coupling the test plate on the base plate.
20. An optical reading device according to any one of the preceding claims, characterized in that the number of conversion elements is equal to the number of test positions of a test plate to be read.
25. An optical reading device according to any one of the preceding claims, characterized in that the optically sensitive elements are designed for registering light coming from a chemo-optical substance, for measuring a degree of concentration of a substance to which the chemo-optical substance is sensitive.
6. An optical reading device according to claim 5, characterized in that the optical elements register a half life of fluorescence light.

7. An optical reading device according to at least one of the preceding claims, characterized in that it has the size of a standard microtitre plate, so that the reading device can be included in an incubator and be read.

8. An optical reading device according to at least one of the preceding 5 claims, characterized in that the reading device comprises a light source for emitting excitation light, which light source emits light in a direction away from the light-receiving areas.

9. A method for testing test substances with an optical reader according to any one of the preceding claims, characterized in that the method 10 comprises the steps of providing the test substances in a microtitre plate, coupling the reader to the microtitre plate and inserting the reader into an incubator, while the measuring signals coming from the reader are stored in a memory of the reader and/or are outputted to a central processing unit.

10. A microtitre plate, characterized in that the microtitre plate is 15 provided with coupling means for coupling the plate to an optical reader according to at least one of the preceding claims.

11. A microtitre plate according to claim 10, characterized in that the microtitre plate is provided with a chemo-optical coating.

12. A microtitre plate according to claim 11, characterized in that the 20 coating is oxygen sensitive and that the microtitre plate comprises a closure for closing off the test substances in a gas-tight manner.